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**UNITED STATES DISTRICT COURT
DISTRICT OF WYOMING**

WILLIAM JEROME RUTH, Individually, and as)
Wrongful Death Representative to the ESTATE OF)
CYNTHIA SHOOK RUTH,) Civil Action No. 22-CV-230
Plaintiff,)
v.)
BEARTOOTH ELECTRIC COOPERATIVE, INC., a)
Montana Corporation, and ASPLUNDH TREE
EXPERT, LLC, a Pennsylvania Limited Liability
Company,)
Defendants.)

**EXPERT DESIGNATION BY
DEFENDANT BEARTOOTH ELECTRIC COOPERATIVE, INC.**

Defendant Beartooth Electric Cooperative, Inc. ("Beartooth") designates the following individual to offer expert testimony in the above captioned matter:

1. Jeff Berino, Advanced Engineering Investigations, 8107 West Brandon Drive, 80125, 303-756-2900, Littleton, Colorado. Mr. Berino is a fire and explosion origin and cause investigator and has also been a firefighter for over 40 years. He has been involved in hundreds of fire and explosion investigations, including wildfire investigation throughout the United States, Canada, and Mexico. The following documents are attached hereto and incorporated by this reference:
 - a. Jeff Berino CV.
 - b. Jeff Berino Fee Schedule.

- c. Jeff Berino testimony over the past four years.
- d. Jeff Berino's signed report.

Dated this 13th day of September, 2022.

BAILEY STOCK HARMON COTTAM LOPEZ LLP

/s/ Henry F. Bailey Jr.
Henry F. Bailey Jr.
6234 Yellowstone Road
P.O. Box 1557
Cheyenne, WY 82003
307-638-7745
Attorney for Defendant
Beartooth Electric Cooperative, Inc.

CERTIFICATE OF SERVICE

This is to certify that a true and correct copy of the foregoing *Expert Designation* was served via the court's CM/ECF system on the 13th day of September, 2023, to the following:

Kenneth E. Barker
10956 SD Highway 34
P. O. Box 100
Belle Fourche, SD 57717-0100
kbarker@barkerlawfirm.com

Ian K. Sandefer
143 N. Park Street
Casper, WY 82601
ian@swtriallawyers.com

Robert G. Pahlke
The Robert Pahlke Law Group
2425 Circle Drive, Suite 200
Scottsbluff, NE 69361
rgp@pahlkelawgroup.com

/s/ Henry F. Bailey Jr.
Henry F. Bailey Jr.



Advanced Engineering Investigations

**Advanced
Engineering
Investigations**
www.AEengineers.com

JEFFREY A. BERINO, BS, AAS, INVF, CCFI, CFEI
Senior Investigator
jeff@AEIengineers.com

Mr. Berino is a fire and explosion origin and cause investigator and was a firefighter for over 40 years. He has been involved in hundreds of fire and explosion investigations involving subrogation issues, expert testimony, code analysis, technical research, wildfire origin and cause, and evidence collection. He is well known for his many years of experience in wildfire investigations for government agencies and utility companies in the United States, Canada, and Mexico. He also has expertise in fire scene incident management and senior level instruction for leadership and fire science classes.



EDUCATION

Courtroom Testimony Course, National Fire Academy, Maryland, 2001
 Fire Investigation Course, National Fire Academy, Maryland, 1999
 Executive Fire Officer Program, National Fire Academy, 1992
 Associate of Applied Science Degree in Fire Science, Colorado Mountain College, 1990
 Bachelor of Science, Business Administration, North Adams State College, Massachusetts, 1979

CERTIFICATION & LICENSURE

Over 1,900 hours of tested training on various aspects of fire investigation from local, state, and national speakers/associations

Over 8,000 hours of executive level leadership training in all aspects of firefighting and leadership

State of Colorado Certification for the following:

Colorado EMT-B, EMT-I, EMT-P

Department of Homeland Security Advanced Incident Commander

Department of Justice Emergency Response to Terrorism

FEMA Certified in the National Incident Management System at 700 and 800 level

Fire and Explosion Investigator (CFEI)

Fire Inspector

Fire Instructor

Fire Investigator (CCFI)

Fire Officer III

Fire Suppression Systems Inspector

Hazardous Materials at Operations Level

Incident Commander of the Northwest Colorado Type 3 Incident Management Team

Incident Commander of the Summit County Incident Management Type IV Team (Non-NWCG)

Internationally Certified International Fire Code, Level II

National Wildfire Investigator Training – Federal Law Enforcement Training Center

Nationally Certified Type III Incident Commander for NWCG & FEMA Overhead Teams

Nationally Certified Uniform Fire Code, Level II

NWCG Certified Wildfire Investigator (INVF)

Pyrotechnics Operator

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Type 3 Incident Commander
Vocational Teaching Certificate, Fire Science and EMS

WORK HISTORY

Senior Investigator, *AEI Corporation*, 2015-Present

Chief, *Summit Fire Authority and EMS*, 2015-2020

Senior Fire Investigator, *PIE Consulting & Engineering*, 2000-2015

Firefighter to Fire Chief (progressed through every rank in the fire service via competitive testing and advancement processes: Firefighter, Engineer, Lieutenant, Captain, Fire Marshal, Assistant Chief, Deputy Chief, and Fire Chief), *Frisco & Lake Dillon Fire District*, 1980-2015

Volunteer CPR Instructor, *American Red Cross*, 1984-2005

Volunteer EMT-B, EMT-I, EMT-P, *Summit County Ambulance Service*, 1984-1998

Explorer Scout, assisted in founding and staffing the *North Stamford Ambulance Volunteer Service*, 1974-1975

AWARDS & ACCOMPLISHMENTS

Frisco's Finest, Town Council and Mayor of Frisco, Colorado – February 2020

Colorado Fire Chief of the Year, Colorado Division of Fire Prevention & Control, Colorado State Fire Chiefs, and Colorado Professional Firefighters Association – October 2019

Life Saving Award, Summit Country Sheriff's Department – 1988

Life Saving Award, Summit County Ambulance Service – 1990

Instructor of the Year, Colorado Mountain College – 1988 and 1990

AFFILIATIONS

Colorado Special District Association

Colorado State Fire Chiefs Association, Chairman of the Wildfire Section

International Association of Arson Investigators (IAAI)

International Fire Chiefs Association

International Fire Code Institute

National Association of Fire Investigators (NAFI)

National Fire Protection Association, Society of Executive Fire Officers

PUBLICATIONS

Berino, J.A. "Answers from Ashes." *Texas Association of Defense Counsel Magazine*, Fall/Winter 2020.

Berino, J.A. "Answers from the Ashes." *CLM Magazine*, October 2020.

Berino, J.A. "Fire Walk with Me." *Claims Management Magazine*, August 2016.

Berino, J.A. "Techniques to Tame the Flames." *Claims Management Magazine*, January 2013.

Berino, J.A. "Speaking of Auto Fraud." *International Claims Magazine*, March 2009.

Berino, J.A. "My Insured Was Injured on the Job and It Wasn't His Fault: Effective Subrogation Strategies for the Workers Compensation Insurer." *The Subrogator*, Winter 2008.

Berino, J.A. "Negative Corpus – A Help or Hindrance." *The Investigative Engineer*, June 2008.

Berino, J.A. "The Pitfalls of Modern Investigative Methodology Using Negative Corpus." *The Investigative Engineer*, December 2007.

Berino, J.A. "Investigation of Wildfires and the Growing Hazard." *Claims Magazine*, June 2007.

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Berino, J.A. "Dangerous but Beautiful." *International Claims Magazine*, July 2005.

Berino, J.A. "Investigative Challenges in Today's Wildfires." *The Investigative Engineer*, April 2003.

Berino, J.A. "International Fire and Building Codes Make Debut – Key to Establishing Liability." *The Investigative Engineer*, April 2002.

COURSES TAUGHT & PRESENTATIONS

Pyrotechnics Safety, Code Analysis, and Inspection Practices

Colorado Chapter of the International Association of Arson Investigators, West Slope (CIAAI) – June 2023

Sherlocking Wildfires

CPCU National Webinar – July 2022, February 2023

Wildfire Investigation and Structural Hardening for Wildfires

Building Science Corporation – August 2022

Fanning the Flames: Cutting Edge Wildfire Investigation Methodology

Chartered Property Casualty Underwriter (CPCU) Society – December 2020

Wildfire Investigation Techniques for the Utility Industry

Xcel Energy – August 2020

Behind the Scenes in Wildfire Investigation

Healthy Forest Task Force – March 2020

Emerging Trends in Wildfire Investigation

Multi Agency Fire Investigation Team (MAFIT) – March 2019

Wildfire Investigations

Colorado Chapter of the Property and Casualty Underwriter – November 2015

Pyro and Wildfire Investigation

Colorado Springs Fire Department – September 2015

Cutting Edge Management of Wildfire Investigations

Defense Research Institute (DRI) – January 2013

Co-presented with Atty. M. Jones, Sprouse Law, Las Vegas, NV – November 2012

The Next Big Burn: Wildfire Origin & Cause

Arizona Chapter of the CPCU Annual Meeting – March 2012

Wyoming Claims Association Annual Meeting – May 2010

Current Claims Challenges and Investigation Practice in the Field on Pyrotechnic Investigations

Property Loss Research Bureau – March 2010

Effective Subrogation Strategies

Co-presented with Atty. S. York & Engrs. S. Biagoitti & B. Stolz, PIE University – October 2009

Current Investigation Practices in the Field, As Well As Courtroom Preparation and Litigations Issues in Wildfire Investigations

Property Loss Research Bureau – March 2009

Litigation and Subrogation Issues in Wildfire Investigations

National Association of Subrogation Professionals – January 2009

Wildfire Mitigation and Wildfire Investigation

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Colorado Insurance Council – January 2009

Cutting Edge Investigative Techniques on Wildfire Investigation & Legal Issues for Defense Attorneys and Senior Industry Personnel

Defense Research Institute's Annual Meeting – November 2008

Wildfire Investigation and Advanced Investigative Techniques in Preparing for an Effective Criminal Prosecution

Summit County Law Enforcement – September 2008

Wildfire Origin & Cause Determination

Denver Claims Association – July 2008

Wildfire Cause and Legal Issues

Property Loss Research Bureau Annual Meeting – April 2008

Advanced Fire Investigation – Wildfire Investigation and Evidence Collection

Wyoming Claims Association – June 2007

Effective Subrogation Issues in Fire Investigations

USAA Insurance Company – May 2007

Fire Science Degree Program – Multiple Classes in Fire Investigation

Colorado Mountain College, Breckenridge, CO – 1980-2004

Fire Investigation and Techniques

PIE University – October 2000

Automotive Fires

PIE University

Effective Investigative Methodology

Allstate Insurance

Fire Science Classes

Summit County Fire Authority

Multiple subjects, with focus on advanced wildfire investigations and scene preservation

Mechanical Fires

PIE University

Wildfire Investigative Techniques

PIE University

INTERVIEWS

America Public Radio – wildfire issues and wildfire investigations, 2012-2014

CNN – wildfire investigations – July 2012

Colorado Sun – consulting expert

Denver Post – consulting expert

FOX 31 Denver – wildfire tactics and safety

KCNC Channel 4 Denver – wildfire investigations

KUSA Channel 9 Denver – wildfire danger and wildfire investigations

KYSL Radio – fire prevention for the homeowner, wildfire safety

NPR Radio – wildfire and defensible space tactics

SDN – fire suppression tactics, wildfire tactics



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Investigations
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STANDARD TERMS & CONDITIONS

These Terms and Conditions, Fee Agreement & Billing Policy, and Artifact/Evidence Storage Fees & Billing Policy, along with the Retention Agreement Letter, form the Agreement as if they were part of one and the same document. Unless otherwise specified, the laws of the State of Colorado shall govern this Agreement.

AEI specifies herein that any Firm, Attorney, or Public Adjuster is acting on behalf of Client and must have authority from Client to retain AEI Corporation [hereinafter “AEI Corporation” or “AEI”] subject to the terms of this Agreement. By accepting services from AEI, any Firm, Attorney, or Public Adjuster specifically acknowledges that such authority is possessed. If Firm, Attorney, or Public Adjuster enters into this Contract without authority from Client to do so, then Firm, Attorney, or Public Adjuster shall be responsible for any fees or expenses occurred by AEI relative to this Contract, shall be bound by all terms of this contract, and shall become the de facto “Client” under this agreement.

Unless you advise AEI otherwise in writing within 24 hours of receipt, you agree to comply with the fee schedule and terms & conditions. The Retention Agreement Letter may modify the applicability of these Terms & Conditions. To the extent of any conflict, the Retention Agreement Letter shall control.

FEE AGREEMENT & BILLING POLICY

This fee schedule is not complete unless accompanied by AEI’s full Standard Terms & Conditions. The below Fee Schedule is effective 01/01/2022. The compensation to AEI Corporation shall be as follows:

EXPERTS & STAFF

John L. Schumacher, MChE, PE, CFI, CFPS

Investigative and/or Consulting Services Rate	\$330/hour
HAZMAT and/or Weekend/Holiday Rate	\$380/hour
Testimony (Deposition, Arbitration, or Trial)	\$495/hour

Dennis E. Shelp, MS, PE, CFI, CFEI, CVFI

Investigative and/or Consulting Services Rate	\$330/hour
HAZMAT and/or Weekend/Holiday Rate	\$380/hour
Testimony (Deposition, Arbitration, or Trial)	\$495/hour

Zachary J. Jason, PE, CFI, CFEI

Investigative and/or Consulting Services Rate	\$330/hour
HAZMAT and/or Weekend/Holiday Rate	\$380/hour
Testimony (Deposition, Arbitration, or Trial)	\$495/hour

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Derek T. Nolen, MS, PE, CFEI, CGE

Investigative and/or Consulting Services Rate	\$330/hour
Weekend/Holiday Rate	\$380/hour
Testimony (Deposition, Arbitration, or Trial)	\$495/hour

Scott D. Raszeja, MS, PE, IRPE, CFEI, CID+

Investigative and/or Consulting Services Rate	\$300/hour
Weekend/Holiday Rate	\$350/hour
Testimony (Deposition, Arbitration, or Trial)	\$450/hour

Scott A. Dollars, PE, CFI, CGE

Investigative and/or Consulting Services Rate	\$300/hour
HAZMAT and/or Weekend/Holiday Rate	\$350/hour
Testimony (Deposition, Arbitration, or Trial)	\$450/hour

Brian N. Strandjord, PE, CFI, CFEI

Investigative and/or Consulting Services Rate	\$300/hour
Weekend/Holiday Rate	\$350/hour
Testimony (Deposition, Arbitration, or Trial)	\$450/hour

Shawn A. Sapp, Ph.D.

Investigative and/or Consulting Services Rate	\$300/hour
Weekend/Holiday Rate	\$350/hour
Testimony (Deposition, Arbitration, or Trial)	\$450/hour

Frank A. Croshal, PE

Investigative and/or Consulting Services Rate	\$300/hour
Weekend/Holiday Rate	\$350/hour
Testimony (Deposition, Arbitration, or Trial)	\$450/hour

Matthew S. Dare, MS, ASEP

Investigative and/or Consulting Services Rate	\$270/hour
Weekend/Holiday Rate	\$320/hour
Testimony (Deposition, Arbitration, or Trial)	\$405/hour

Charles B. Sullivan, ASCR2, CKH2

Investigative and/or Consulting Services Rate	\$270/hour
Weekend/Holiday Rate	\$320/hour
Testimony (Deposition, Arbitration, or Trial)	\$405/hour

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Charles R. Brown, CFEI, CVFI, CETP, FIT

Investigative and/or Consulting Services Rate	\$250/hour
HAZMAT and/or Weekend/Holiday Rate.....	\$300/hour
Testimony (Deposition, Arbitration, or Trial)	\$375/hour

Steven R. Foltz, M. Arch, LEED AP

Investigative and/or Consulting Services Rate	\$250/hour
Weekend/Holiday Rate	\$300/hour
Forensic Imaging Services Rate	\$185/hour
Weekend/Holiday Rate	\$235/hour
Testimony (Deposition, Arbitration, or Trial)	\$375/hour

Jeffrey A. Berino, BS, AAS, INVF, CCFI, CFEI

Investigative and/or Consulting Services Rate (Wildland)	\$250/hour
HAZMAT and/or Weekend/Holiday Rate (Wildland)	\$300/hour
Testimony (Wildland Deposition, Arbitration, or Trial)	\$375/hour
Investigative and/or Consulting Services Rate (Structural)	\$190/hour
HAZMAT and/or Weekend/Holiday Rate (Structural)	\$240/hour
Testimony (Structural Deposition, Arbitration, or Trial)	\$285/hour

Anthony W. Ulaszek, CFEI, CVFI, CFII

Investigative and/or Consulting Services Rate	\$190/hour
HAZMAT and/or Weekend/Holiday Rate	\$240/hour
Testimony (Deposition, Arbitration, or Trial)	\$285/hour

Matthew G. Strader, BS, CFEI, FIT

Investigative and/or Consulting Services Rate	\$190/hour
HAZMAT and/or Weekend/Holiday Rate	\$240/hour
Testimony (Deposition, Arbitration, or Trial)	\$285/hour

Technician

Hourly Rate	\$175/hour
HAZMAT and/or Weekend/Holiday Rate	\$225/hour

Support Staff

Hourly Rate	\$50/hour
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Time/services scheduled by client on weekends and/or holidays will be billed at the above listed rate. HAZMAT rates will be charged at sites requiring A, B, or C levels of protection. Deposition Testimony fees are required in advance by the party responsible for payment (see below Standard Terms & Conditions). Testimony is invoiced in full-day (8 hour) increments. Half-day courtesies will be considered solely at the discretion of AEI. If the adverse party is responsible for the deposition payment, any outstanding balance(s) will be paid by Client. Testimony time, fees, and expense to be further paid as detailed below in the Standard Terms & Conditions.

EXPENSES

- Flash Drive \$30.00/each
- Mileage Standard IRS Mileage Rate (billed portal to portal)¹
- Photography \$0.40/photograph (\$200 max/day)
- Videography \$200/day
- Outside expenses (transportation, meals, lodging, materials, supplies, equipment rentals, laboratory services, etc.) are billed at cost plus 10%

EQUIPMENT CHARGES

- 3D Laser Scanning & Site Mapping/Imaging (FARO) \$900/day
- 3D Optical/Laser Scanning & Site Mapping/Imaging (Matterport) \$500/day
- 3D Site Mapping/Imaging \$100/day
- Air Data Multimeter \$100/day
- Combustible Gas Indicator \$50/day
- Computerized Data Acquisition System \$100/day
- Digital Ultrasonic Thickness Gauge \$150/day
- Drone (Advanced) – Integrated FLIR Camera/Video, High Resolution Zoom & LiDAR \$400/day
- Drone (Standard) – 4K Video and High Resolution Camera System.....\$250/day
- Electrostatic Discharge/Static Test Equipment.....\$100/day
- Forward Looking Infrared Camera (FLIR) \$150/day
- Handheld Electrostatic Charge Meter \$100/day

¹ Standard IRS Mileage Rate (<https://www.irs.gov/tax-professionals/standard-mileage-rates>)

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- Multi-Channel Carbon Monoxide Sensors \$200/day
- Multi-Channel Infrared Gas Sensors \$200/day
- Multi-Channel Wireless Carbon Monoxide Monitor \$250/day
- Portable Combustion Analyzer \$100/day

LABORATORY & FACILITIES CHARGES

- Fourier Infrared Spectroscopy (FTIR) \$200/day
- Keyence Digital Microscope \$150/day
- Lab Rental Fee \$500/day (plus Technician time)
- Lab Test Hood/Burn Cell \$100/day
- Scanning Electron Microscope (SEM/EDS) \$350/day (plus Operator time)
- Stereo Microscope with Digital Photo and Video \$100/day
- Universal Test Machine (UTM) \$100/day
- X-ray Equipment \$50/image

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ARTIFACT/EVIDENCE STORAGE FEES & BILLING POLICY

When AEI Corporation retains artifacts/evidence associated with an incident and stores those or exemplar products, it is AEI Corporation's policy to bill for storage of these items and only dispose of them when written authorization is obtained from Client.

- 1) Artifact/Evidence storage is available at a quoted rate. Storage is billed annually, payable in advance. The minimum annual storage fee is \$200.
- 2) AEI Corporation will send a combined Invoice/Disposition Form that includes an invoice for Evidence Storage and an Authorization for Evidence Disposition following collection or receipt of artifacts.
- 3) The Invoice/Disposition Form will be sent via email, or other requested method, within 30 days of receipt of the evidence. Client will have approximately 15 days in which to request disposition of the artifact(s) or remit payment for the storage of the artifacts.
- 4) Storage fees are billed on an annual basis.
- 5) The invoice must be paid, or AEI Corporation must be notified within the time allotted of Client's desire to dispose of the evidence. Lack of communication from Client will be considered a request to store the artifacts and acknowledgment of responsibility to pay the invoice for storage.
- 6) Fees paid for storage not utilized will be refunded to Client upon disposition of the artifacts (minus any disposal costs). Client will continue to incur storage charges until the Authorization for Evidence Disposition is received or actual pickup of the artifacts occurs.
- 7) In the event Client wishes to dispose of the artifacts, the Authorization for Disposition section of the Invoice/Disposition Form must be completed, signed, dated, and returned. Client is responsible for contacting other involved parties to ensure all parties authorize disposal of the evidence.²
- 8) Client will continue to be responsible for the disposition of the evidence until it is picked up, the Invoice/Disposition Form is received authorizing disposal, or such time as another party accepts responsibility in writing for future storage fees and such acceptance is provided to AEI Corporation.
- 9) Client will also be charged any fees associated with the evidence disposal due to the size or hazardous nature of the evidence.

² **NOTE**: *The disposition of evidence may have important implications in any subrogation or litigation efforts. By signing the Authorization for Evidence Disposition form you are agreeing to hold harmless, indemnify, and defend AEI Corporation for any and all claims in connection with the disposition of the evidence in question.*

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- 10) Normal storage will be provided for any items or legal evidence in the possession of, or stored by, AEI Corporation, with the understanding that Client shall fully and unconditionally indemnify, defend and hold harmless AEI Corporation, and its successors and assigns, from any loss, liability, claim, action or suit arising from or incurred in connection with possessing, storing, examining, testing or any other services in connection with possessing such items.
- 11) Evidence shipped at the request or direction of Client or on behalf of Client will be shipped via method and carrier selected by AEI Corporation, unless other arrangements are made. Shipment must be prepaid, or it will be shipped C.O.D. Client will pay packaging expenses. Regardless of shipping method or carrier used, Client agrees to defend, indemnify, protect, and hold harmless AEI Corporation, its past, present, and subsequent officers, directors, attorneys, agents, shareholders, servants, employees, and affiliates [collectively "AEI"] from any and all claims, cross-claims, third-party claims, counterclaims, liabilities, judgments, verdicts, awards, settlements, actions, lawsuits, costs, fees, expenses, damages, attorney fees, legal expenses, and/or cause of action for the same made or to be made by others against AEI arising out of or in connection with any damage or loss of the evidence during or as a result of shipping. Client further covenants not to sue AEI in any court or to prosecute any action of any nature against AEI seeking recovery of damages, expenses or costs of any nature related directly or indirectly to any damage or loss of the evidence during or as a result of shipping.

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STANDARD TERMS & CONDITIONS

1) Billing and Payment

Client is responsible for paying all fees and expenses of the consultant or expert related to the engagement in accordance with the accompanying Fee Schedule. This shall include activities in response to discovery efforts by other parties.

- a) Deposition charges, fees, and expenses to be paid by opposing counsel shall be paid in advance.
- b) Time and mileage fees are charged portal to portal.
- c) Retainer or deposit will be credited against the final invoice for the work.
- d) Fees and expenses will be billed monthly or as time and expenses accrue unless other arrangements are made with AEI Corporation.
- e) Payment is due from Client within 30 days of the invoice unless other arrangements are made with AEI Corporation. AEI Corporation charges a late fee of 2% per month on all invoices not paid within 30 days of the invoice date. Client agrees to pay all collection costs, including any legal fees incurred in connection with the collection of a past due account.
- f) In the event that any portion of an account remains unpaid 30 days after billing, AEI Corporation may, without waiving any claim or right against Client, and without liability whatsoever to Client, suspend or terminate the performance of all services in accordance with the applicable laws of Colorado.
- g) Unless expressly agreed by AEI Corporation in writing, any cost estimates for services stated are for Client's budgeting purposes only and are not quotes binding on AEI Corporation.
- h) Rates and fees are subject to change on a calendar year basis without other notice.

2) Disputes and Conflicts

- a) In an effort to resolve any conflicts that arise related to the services provided by AEI Corporation, Client and AEI Corporation agree that all disputes between them arising out of or relating to the services provided by AEI Corporation shall be submitted to nonbinding mediation unless the parties mutually agree otherwise. Nonbinding mediation shall be completed within 90 days from the date the dispute arises.
- b) AEI Corporation's understanding of the current project scope does not appear to present a conflict. If, however, during the course of the project additional information is discovered that would present a legal or ethical conflict for AEI necessitating AEI's withdrawal from the project (by way of example only, if it is discovered that an existing client of AEI is implicated in the project), AEI will immediately notify Client. In the event that AEI must withdraw from the project due to a conflict, AEI will return all file materials and submit final billing to Client. In the event of

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withdrawal by AEI due to a conflict, Client agrees to hold AEI harmless in connection with the withdrawal including for any consequences of AEI's withdrawal.

3) Testimony Services and Trial Appearances

- a) Client agrees that AEI Corporation will be promptly notified of when and where AEI Corporation may be requested to appear to testify. Client further agrees that Client and/or Client's counsel will be available as reasonably requested to meet with AEI Corporation prior to anticipated testimony. Client understands that AEI Corporation will suffer damages from late notice, cancellation, or rescheduling of AEI Corporation testimony and that the precise amount of these damages would be difficult to determine. Client agrees that Client shall be responsible for paying for all non-refundable out of pocket travel expenses such as airline tickets and hotel rooms incurred by AEI Corporation.
- b) Pre-payment by the party responsible for payment (with the exception of the Client) for Testimony Services and/or Trial Appearances will be required. Pre-payment for Testimony Services and Trial Appearances must be received no later than fourteen (14) business days prior to the scheduled event. NO EXCEPTIONS TO THESE PRE-PAYMENT REQUIREMENTS WILL BE MADE WITHOUT THE EXPRESS PERMISSION OF AEI CORPORATION.
- c) Additionally, if the party responsible for payment (with the exception of the Client) cancels the deposition five (5) or less business days prior to the scheduled testimony date, AEI Corporation is entitled to and reserves the right to invoice/retain the above outlined testimony fee.
- d) Client has the sole responsibility for paying AEI Corporation's testimony costs and fees, regardless of any order by the Court or agreement with opposing counsel. In the event that AEI Corporation's testimony costs or fees are reduced by court order or by stipulation or agreement with opposing counsel, Client shall still be responsible for paying AEI Corporation's full testimony fee.
- e) AEI will retain the entire pre-payment testimony fee for testimony lasting greater than four (4) hours.

4) Daubert Motions and Motions in Limine

- a) Attempts to exclude expert testimony by motion are becoming common practice (often referred to as motions under FRE 702, Daubert, Frye, or state rules of evidence and associated case law) (hereinafter referred to as "Daubert Motions"). Daubert Motions if successful, not only impact an expert's ability to testify in the subject case, but also may have long-term negative effects on the expert's credibility and their ability to provide testimony on future matters and economic interests. AEI Corporation requires any such attempt to discredit its experts be reported to them as soon as Client receives notification and that AEI Corporation be an integral part in responding to such actions. This involvement will not only protect the interests of AEI Corporation, but will also help to ensure consistent results in litigation.

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- b) As part of this Agreement, AEI Corporation requires immediate advisement of the filing of any motion to exclude, or any Daubert-style motion, challenging an AEI Corporation expert and/or expert's testimony, as well as a copy of all motion papers. All data related to deadlines to the motion or any hearing related to the challenge must be provided to AEI Corporation in a timely manner. In order to defend its employees AEI Corporation will be allowed to provide input and assist in the preparation of any written opposition of such motion.
- c) AEI Corporation retains the right to hire independent counsel to advise them with respect to such motion, to prepare written opposition to such motion, and/or to attend any hearing related to the challenge to ensure the interests of the AEI Corporation expert are adequately represented. Reasonable and appropriate actions to obtain pro hac vice admission of counsel selected by AEI Corporation should be considered. AEI Corporation will be advised of judicial decisions on any such motion and will receive a copy of any order issued by the court.
- d) To the fullest extent permitted by law, and notwithstanding any other provision of this agreed to, the total liability, in the aggregate, of AEI Corporation, its officers, directors, partners, employees and sub-consultants, and any of them, to Client, for any and all claims, losses, costs or damages, including attorney's fees costs and expert-witness fees and costs of any nature whatsoever or claims expenses resulting from or in any way related to the Project or Agreement from any cause or causes shall not exceed the total compensation received by the AEI Corporation, or the total amount of \$50,000, whichever is greater. It is intended that this limitation apply to any and all liability or cause of action however alleged or arising, unless otherwise prohibited by law.

5) Project Management and Responsibilities

- a) Client shall provide AEI Corporation with all pertinent information, to the extent available, including any technical materials, expert reports, depositions, pleadings, to understand the nature of the claims.
- b) Client understands and acknowledges that forensic work, particularly that which is related to or results in litigation, may span a significant period of time. AEI will endeavor to maintain consistency in the AEI consultant or expert working for Client. However, Client understands and acknowledges that there may be circumstances outside of the control of AEI where the AEI consultant or expert working for Client is no longer available, including but not limited to death, disability, or termination of employment of the consultant or expert. In those circumstances, AEI reserves the right to substitute another AEI consultant or expert to work for Client and AEI will bear the cost of the time for that substitute consultant or expert to become familiar with the matter up to the date of substitution. Client agrees to defend, indemnify, protect, and hold harmless AEI Corporation, its past, present, and subsequent officers, directors, attorneys, agents, shareholders, servants, employees and affiliates (collectively "AEI") from any and all claims, cross-claims, third-party claims, counterclaims, liabilities, judgments, verdicts, awards, settlements, actions, lawsuits, costs, fees, expenses, damages, attorney fees, legal expenses and/or cause of action for

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the same made to be made by others against AEI arising out of or in connection with the consultant or expert unavailability or substitution. Client further covenants not to sue AEI in any court or to prosecute any action of any nature against AEI seeking recovery of damages, expenses or costs of any nature related directly or indirectly to the consultant or expert unavailability or substitution.

- c) Client agrees that AEI will be timely informed of any deadlines that may affect AEI's services in this matter. Client further agrees that AEI will be provided, in a timely fashion, with copies of or access to all non-privileged, arguably relevant documents, evidence and other materials.

6) Confidentiality and Work Product

- a) All work product produced by AEI is intended solely for use by AEI and Client, and no other party may use AEI's work product without AEI's express written consent. For the purpose of this document, AEI's work product means all reports, laboratory test data, animations, visual work product, calculations, estimates, concepts, ideas, theories, notes, and other documents or information prepared and captured in any form or medium by AEI, its staff, consultants, and/or its affiliates in the course of providing consulting services to Client.
- b) All work product produced by AEI Corporation are instruments of professional service and remain the property of AEI Corporation. Any reuse of these documents or the information contained therein outside of the project is prohibited without the express written consent of AEI Corporation.

7) Severability

- a) It is understood and agreed by the parties hereto that, if any part, term, or provision of this agreement is held by the courts to be illegal or in conflict with any law or statute of the State of Colorado, the validity of the remaining portions or provisions shall not be affected, and the rights and obligations of the parties shall be construed and enforced as if the agreement did not contain the particular part, term or provision held to be invalid.

8) Assumption of Responsibility

Client agrees that AEI, in performing its functions in accordance with its objects and purposes, does not assume or undertake to discharge any responsibility of Client to any other party or parties.



Testimony Record of Jeffrey A. Berino

Four Year Testimony Record

P/N	Date	Depo, Trial, Arb	Case No.	Court	Case Name	Pl/Def	Description
13680	5/16/2019	T	2017CR411	District Court, County of Broomfield, State of Colorado	People of the State of Colorado v. Scott Barbarick	DEF	FIRE
14187	11/5/2019	D	No. 17-2-04352-31	State of Washington, Snohomish County Superior Court	State of Washington, Department of Natural Resources v. Pulley Corporation, et al.	DEF	WLDF
14178	01/2020	D	2012-MCF-01	The 21st Judicial District Court of Bastrop County, Texas	Bastrop County Wildfire Litigation	DEF	WLDF
13850	10/21/2020	D	Civil Action No. 19-cv-01913-REB-NRN	The United States District Court for the District of Colorado	United States of America v. The Durango & Silverton Narrow Gauge Railroad Company, et al.	DEF	WLDF
13850	3/15/2021	D	Civil Action No. 19-cv-01913-REB-NRN	The United States District Court for the District of Colorado	United States of America v. The Durango & Silverton Narrow Gauge Railroad Company, et al.	DEF	WLDF
13309	10/12/2021	D	Case Nos.: CJ-2018-25; CJ-2019-5; CJ-2019-7; CJ-2019-8; CJ-2019-9; CJ-2019-10	District Court of Beaver County, State of Oklahoma	Oklahoma Farm Bureau Mutual Insurance Company, et al. v. Lime Rock Resources II-A, LP, et al.	DEF	WLDF



STATEMENT OF OPINION

Wildland Fire – Origin & Cause Investigation

Project Name: Louis L'Amour Fire
Representing: Beartooth Electric Cooperative
Case Name: Ruth v. Beartooth Electric Cooperative, Inc., and Asplundh
Tree Experts, LLC
Case Number: 22-CV-00230-KHR
Location: 197 Louis L'Amour Lane, Clark, Wyoming
Date of Loss: 11/15/21
Project No.: 15029





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Project No.: 15029

Report Prepared for:

Bailey Stock Harmon Cottam Lopez, LLP

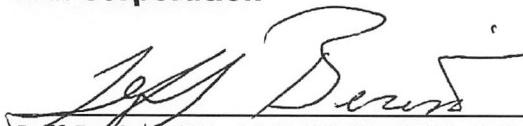
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Submitted by:

AEI Corporation



Jeff Berino, BS, AAS, INVF, CFEI, CCFI
Senior Investigator
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September 12, 2023
Date

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INTRODUCTION

On February 16, 2022, AEI Corporation performed a site visit to investigate the origin and cause of a wildland fire,¹ which occurred on November 15, 2021, near 197 Louis L'Amour Lane in Clark, Wyoming. Several structures suffered damage or were destroyed, and there was one fatality as a result of this fire. In addition to the site inspection, AEI also attended a laboratory examination at Kilgore Engineering in Englewood, Colorado on April 11, 2023. In addition to determining the origin and cause of this wildfire, AEI was further asked to determine if there were any contributing factors surrounding the cause of this wildfire.

BACKGROUND

The wildfire occurred at 10:32 PM on November 15, 2021, and ultimately consumed approximately 300 acres. The wildfire generally burned in a west to east direction down the drainage of Line Creek, which paralleled Louis L'Amour Lane. The wildfire perimeter resembled a very narrow “V” shape or pattern.²

The evening the fire occurred, a significant wind event was present. The weather conditions³ at the time of the fire in nearby Cody, Wyoming were 60°F, relative humidity 25%, and winds out of the west/northwest at 29 miles per hour (mph), with gusts up to 43 mph. However, per his deposition testimony, Dave Hoffert believed the winds “to be in excess of 80 miles per hour.”⁴ The vegetation consisted primarily of cottonwood trees, sagebrush, and wheatgrass, and the fuel bed was in a dormant or cured state at the time of the wildfire.

INVESTIGATION TASKS

The following tasks were performed by AEI during the investigation:

1. Conducted a site examination on February 16, 2022.
2. Attended a laboratory examination on April 11, 2023 of the evidence collected by other parties from a subject tree and adjacent power lines.

¹ **Fire.** A rapid oxidation process, which is a chemical reaction resulting in the evolution of light and heat in varying intensities. (NFPA 921-2021 3.3.66).

² **V-Pattern.** V-Patterns are generally influenced by strong winds or steep slopes (or both) NWCG PMS 412 Ch 1B (11).

³ <https://www.wunderground.com/history/daily/us/wy/cody/KCOD/date/2021-11-15>

⁴ Dave Hoffert Deposition – page 13 line 17.

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3. Performed an interview with Mr. Kevin Owens from Beartooth Electric Cooperative (BEC).
4. Reviewed the depositions of Dave Hoffert, Kevin Owens, and Nate Hoffert.
5. Reviewed the preliminary investigation report from Mr. Eric Black from Knott Laboratories.
6. Reviewed the expert disclosures from Alan Carlson, Paul Werth, Samuel Shuck, Paul Rosenbaum, John Goodfellow, Ana Fulladolsa, Christopher Leatherman, and a report from GPRS.
7. Reviewed the items listed below.

REVIEWED ITEMS

The following items were reviewed in whole or in part by AEI during the investigation:

1. NFPA 921, *Guide for Fire and Explosion Investigations*, 2021 Edition.
2. NWCG PMS 412, *Guide to Wildland Fire Origin and Cause Determination*, 2016 Edition.
3. Finney, McAllister, Grumstrup & Forthofer, *Wildland Fire Behaviour – Dynamics, Principles and Processes*, 2021.

STATEMENTS

Mr. Kevin Owens

Mr. Owens is the general manager of BEC. Mr. Owens was present during the site investigation on February 16, 2022. Mr. Owens made the following comments to this investigator regarding the wildfire:

- The conductor (i.e., power line) located to the west of the subject tree was a 7200-volt single phase line.
- He had previously collected two pieces of evidence, which included a branch from a cottonwood tree that had some evidence of burning or charring on one end, and a small trash can.
- Mr. Owens showed this investigator a cottonwood tree (subject tree) located to the east of the BEC conductors that had some char or burning on the ends of several branches on its west side.
- Mr. Owens stated that previous investigators believed the fire started to the east of this cottonwood tree.
- He stated that he was told the winds exceeded 100 to 140 mph the evening the fire occurred.

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- Mrs. Alice Martin, who lived on Louis L'Amour Lane, had seen a “black Chevy pickup” on the property the day the fire occurred.
- The property where the fire was believed to have started was owned by Scott and Gretchen Hutton, and was used as a church camp in the summer. The Huttons were not present when the fire occurred.
- *Asplundh Tree Experts, LLC* (Asplundh) had the contract to maintain the right of way clearances, and they had been to the property approximately six weeks prior to the fire.
- No power outages were reported prior to the fire or during the initial phases of the fire.
- No conductors had been replaced in the alleged area of origin since the fire.
- No fuses had blown anywhere near the Hutton property.
- BEC has a 20 foot right of way from the centerline of the conductors (10 ft. on each side).
- Asplundh’s contract calls for a minimum of 10 feet of clearance from any conductor to any tree or tree branch.
- He stated that Mr. Eric Black, who assisted with a LiDAR Survey, informed him that a branch on the subject cottonwood tree was only 5 ft. 5 in. from one of the conductors on the lines that ran to the Huttons’ property.
- Ms. Connie King was the first 911 caller.
- The closest recloser was over one mile away (east on Louis L'Amour Lane) and it was set to a 3-shot.

SITE INSPECTION

There was approximately 2 inches of snow on the ground the morning of the investigation on February 16, 2022. Some of the snow had begun to melt during the day, exposing the bare ground and grass as it warmed up. The site inspection began with a general walk around the Hutton property in a clockwise, then counterclockwise, direction. Fire pattern indicators (FPI)⁵ were examined during this observation period and a General Origin Area (GOA)⁶ was identified.

⁵ **Fire Pattern Indicator.** A physical object that displays changes (fire effects) from exposure to heat, flame, and combustion byproducts (*NWCG PMS-412, Page 24, 2016 Edition*).

⁶ **General Origin Area.** The area of the fire that the wildland fire investigator can narrow down based on macroscale indicators, witness statements, and fire behavior context (*NWCG PMS-412, Page 119, 2016 Edition*).

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Mr. Owens placed a subject branch (Figure 1) he had in his possession on the ground in the approximate location he believed it was originally found. Mr. Owens also placed the trash can he had in his possession (Figure 2) in an area where he believed it had been originally located. The branch he placed on the ground was approximately 36 feet east of the east conductor and was also east of the subject tree. He placed the trash can approximately 460 feet east of the conductor. It is unknown what the exact position of the branch was in relation to the ground fuels when it was originally discovered and removed. It is unknown whether the trash can was on its side or upright when it was originally taken into possession by Mr. Owens. Careful examination of the ground fuels surrounding the subject branch showed no burning of any kind on these adjacent fuels. There was no evidence of residual debris or burned materials in the subject trash can, nor was it known if the trash can had been blown or rolled to the location depicted by Mr. Owens by the high winds present the night of the fire.

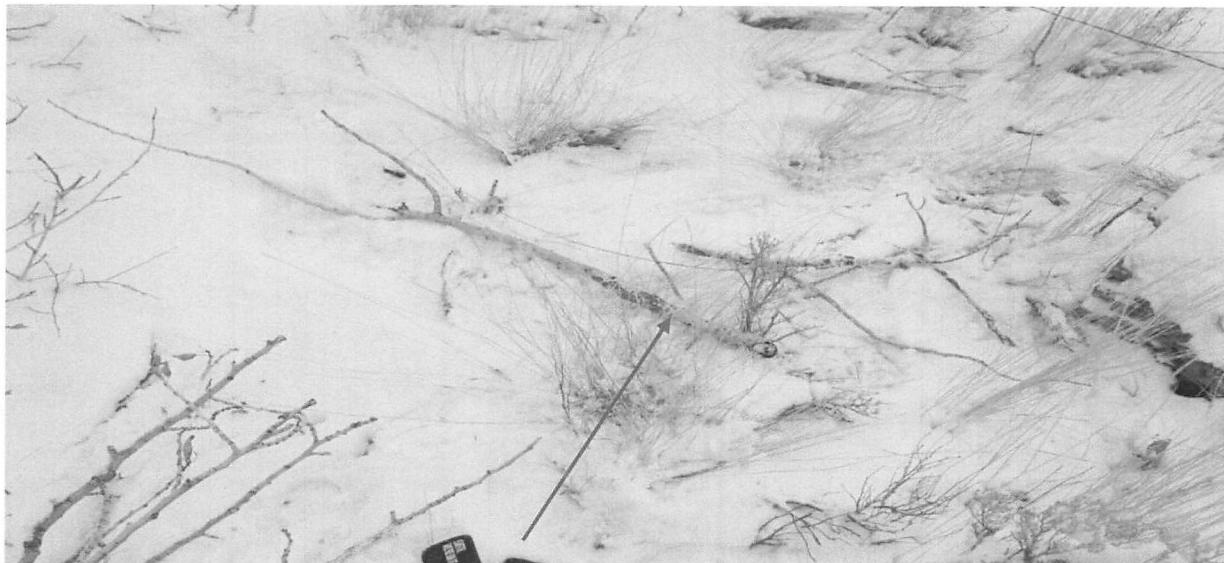


Figure 1. Subject branch (15029 JAB 1-2307).

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Figure 2. Subject trash can (15029 JAB 1 -2370).

Macroscale Fire Pattern Indicators (FPIs)⁷ include staining, angle of char, sooting, and spalling. Microscale FPIs⁸ could not be seen due to the snow cover on the ground. Areas where the fire intensity is higher or more severe are usually located at the head (or the front) of a fire and are often referred to as Advancing FPI Vectors.⁹ Advancing FPIs were photographed with a red arrow on a white background in lieu of red flagging due to the environmental conditions that were present (Figures 3 and 4). Backing FPIs are in areas with less damage or intensity compared to advancing areas, and they usually are located where the fire burned back against the wind or topography. The Backing FPIs were photographed with a blue arrow on a white background in lieu of blue flagging due to the environmental conditions present (Figures 5 and 6). Lateral FPIs show protection on one side of an object; however, due to the snow cover, they were not able to be adequately identified.

⁷ **Macroscale Fire Pattern Indicators.** Usually associated with large objects or areas and are easily visible from a distance. Macroscale indicators are usually found in areas of higher fire intensity (*NWCG PMS-412, Page 31, 2016 Edition*).

⁸ **Microscale Fire Pattern Indicators.** Associated with smaller objects or areas, microscale fire pattern indicators may not be easily observed from a distance (*NWCG PMS-412, Page 31, 2016 Edition*).

⁹ **Fire Pattern Indicator Vectors.** A group of individual fire pattern indicators located near each other, which as a group reflect the fire spread vector within that area or the physical characteristics of a single fire pattern indicator that shows the direction of fire progression at that point (*NWCG PMS-412, Page 25, 2016 Edition*).

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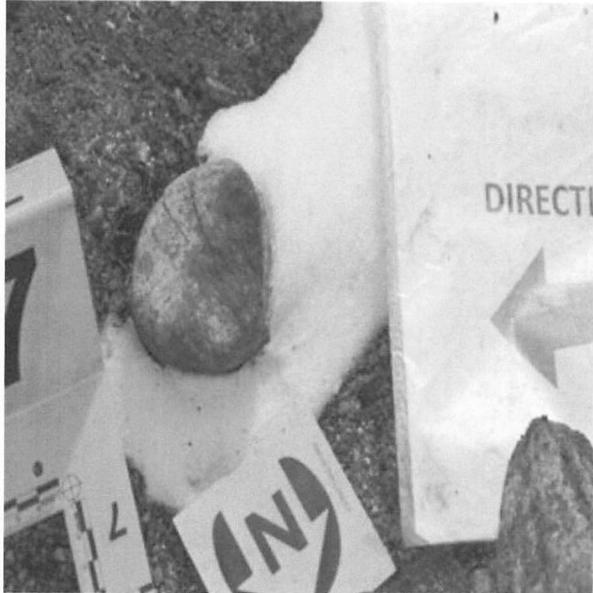


Figure 3. "Staining" FPI in an Advancing Vector (15029 – JAB 1 – 2402).



Figure 4. "Angle of Char" in an Advancing Vector (15029 – JAB 1 – 2402).



Figure 5. "Beveling" in a Backing Vector FPI (15029 JAB 1-2364).



Figure 6. "Char" in a Backing Vector FPI (15029 JAB 1-2356).

The advancing vectors were identified via a serpentine search pattern progressing from an easterly location in the GOA to the west, until the patterns became more subtle, and some backing indicators were noticed.

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This area is called the transition zone.¹⁰ This transition zone appeared to be a Specific Origin Area (SOA)¹¹ and was approximately 15 ft. by 15 ft. in area. This SOA was approximately 139 ft. east of the subject conductor and tree. Due to snow coverage and the elapsed time since the fire occurred, an Ignition Area¹² and a Point of Origin¹³ were not able to be identified.

Examination of the subject tree revealed indications of a tree branch contacting an energized conductor, with resulting char on the branch (Figure 7). Discoloration was also observed on the conductor adjacent to the char on the branch of the subject tree (Figure 8).



Figure 7. Subject tree with char on a branch adjacent to a conductor (15029 JAB 1-2419).

¹⁰ **Transition Zone.** Areas of directional change based on variations of intensity such as Advancing to Backing. Transition areas may outline a specific origin area (*NWCG PMS-412, Page 30, 2016 Edition*).

¹¹ **Specific Origin Area.** The smaller area within the GOA where the fire's direction of spread was first influenced by wind, fuel, or slope. ...The SOA is where the wildland fire investigator is primarily looking at microscale indicators and generally needs to be down on their hands and knees or stooping to observe the indicators and any potential evidence (*NWCG PMS-412, Page 119, 2016 Edition*).

¹² **Ignition Area.** Contained within the SOA and will be the smallest location which a wildland fire investigator can define, within the SOA, in which a heat source and fuel interacted with each other, and a fire began (*NWCG PMS-412, Page 119, 2016 Edition*).

¹³ **Point of Origin.** The exact physical location within the Ignition Area where a heat source and the fuel interact, resulting in a fire (*NWCG PMS-412, Page 119, 2016 Edition*).

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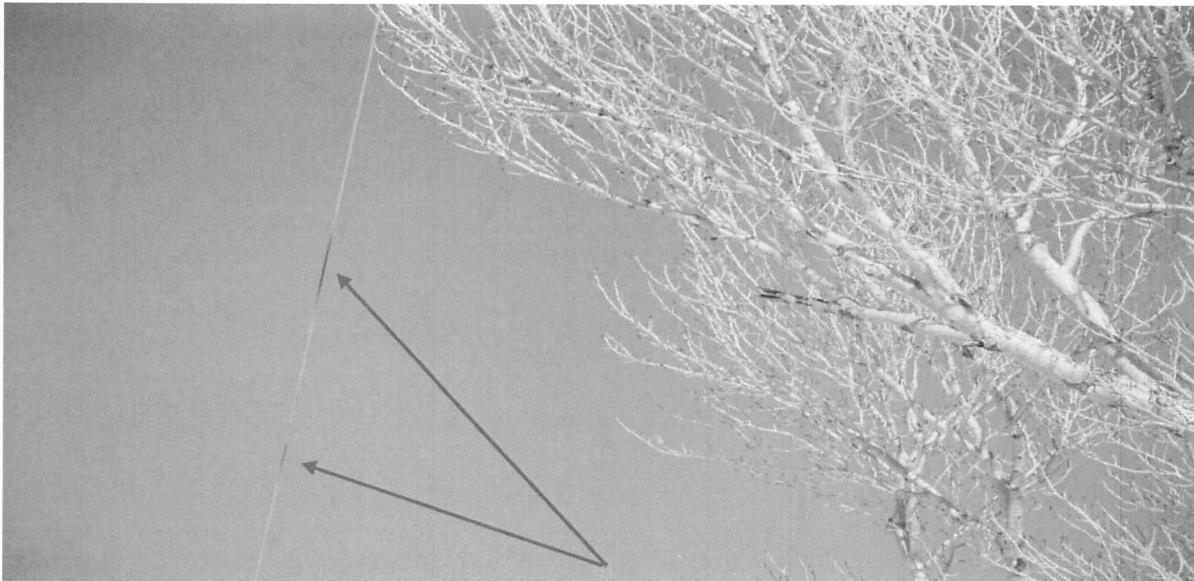


Figure 8. Staining/discoloration on conductor adjacent to subject tree (15029 JAB 1-2428).

DISCUSSION

The subject cottonwood branch was located approximately 36 ft. to the east of the conductor (refer to Figure 1). There was no visual evidence of any fire ignition at or near this branch, or any fire progression in any direction from its location. The trash can, which was located approximately 460 ft. to the east of the conductor (refer to Figure 2), was in an area where there was evidence of an advancing fire and was not located anywhere near the SOA. The subject trash can could have been blown or rolled from another location completely outside the GOA due to the high winds the night of the fire. There was no debris or evidence of recent burning in the trash can.

Examination of the collected evidence observed at the laboratory analysis on April 11, 2023, showed charring on the distal portions of the branch taken into evidence (Figure 9). Sooting/staining and possible abrasion on a portion of the conductor running directly adjacent to the subject tree was also observed (Figure 10).

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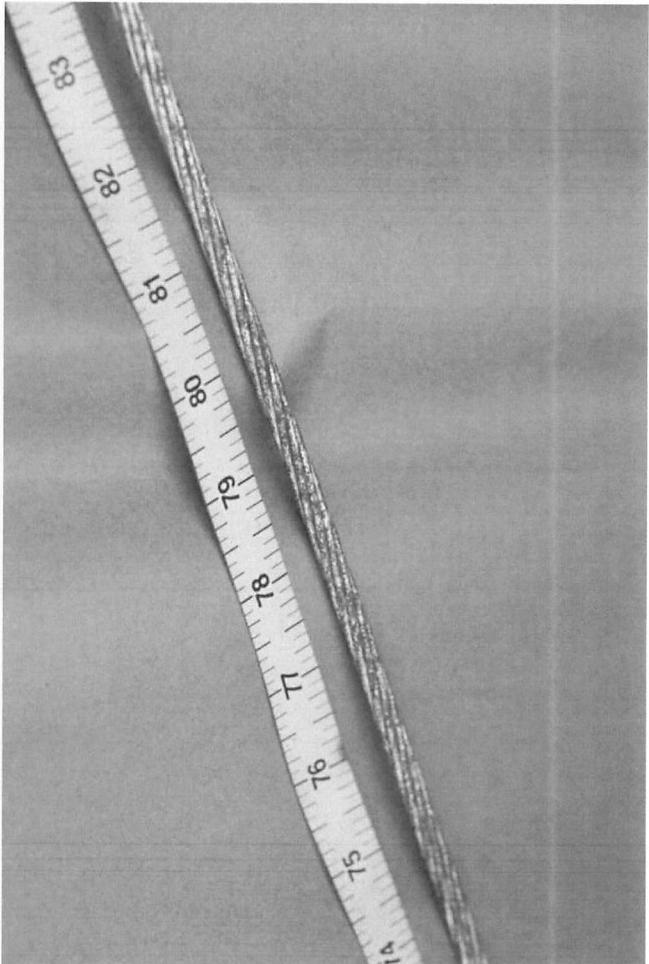


Figure 10. Sooting or staining on conductor (15029 JAB 2 – 5020).



Figure 9. Charring of branch removed from the subject tree (15029 JAB 2-002).

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The contract between BEC and Asplundh regarding limb clearance to conductors is outlined in section “5C” and in Exhibit “B” of the contract. It states that the contractor shall limb any branches within 10 feet of a conductor. Specifically, section 5C states that a tree in the easement “shall be felled, if agreed upon by a landowner, otherwise it will be trimmed per specification M1.30G and the National Electric Safety Code (NESCO) C-2-2002 I 8(AI) attached hereto as Exhibit “B” and if the trunk diameter at conductor level is greater than 6 inches the encroachment tree may be side trimmed.” Section 5E of the contract also states, “trees that are limbed shall be limbed from ground level to 12 feet above the conductors.” BEC was not required to inspect the work done by Asplundh per the contract. Section 17 of the contract states: Inspection of Work – “BEC may inspect the work and may maintain inspectors on the job site...” It does not state that BEC “shall” inspect the work.

The Guide to Wildland Fire Origin and Cause Determination (NWCG PMS-412) states on page 245, “the ignition of a powerline fire often occurs due to high winds, contact with vegetation...” and that “fires from powerlines can start as a result of conductor contact with standing vegetation due to inadequate clearances....” The spacing from the branches on the subject tree to the energized conductor was ~5 ft. 5 in., not the required 10 feet as specified in Exhibit “B” in the contract between BEC and Asplundh.

On page 68, line 13 in his deposition, Mr. Owens was asked, “did you expect that Asplundh would trim trees in a way that would protect your employees, your members and the public?” Mr. Owens replied, “yes.”

CONCLUSIONS

The results of the investigation conducted by AEI indicate the following:

1. The wildfire originated approximately 136 feet east of the subject tree. This area is for all intents and purposes identical to the SOA identified by Mr. Alan Carlson in his report dated August 15, 2023.
2. No visible damage to the conductors, poles, or crossarms were observed on any of the BEC equipment in the GOA.
3. The fuel first ignited was the organic material from a branch on the west side of the subject tree.
4. The cause of the fire was a portion or portions of the subject tree contacting an energized conductor during a high wind event. This contact resulted in airborne embers or firebrands¹⁴ traveling approximately 136 feet to the east and contacting a receptive bed of ground fuels.

¹⁴ **Embers and Firebrands.** Embers and firebrands can be lofted by the convective column and fall out or be blown by wind into unburned fuel great distances... (*Section 25.5.1 NFPA 921, 2021 Edition*).

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5. No other competent ignition sources were observed in the GOA.
6. The required clearance from the conductor to the branch(s) on the subject tree was not maintained by the Asplundh Tree Experts who were working in the Line Creek drainage area approximately 6 weeks prior to the fire.
7. This fire would not have occurred if the proper mitigation and limbing of tree branches adjacent to the east conductor was completed per the contract between BEC and Asplundh.
8. The cause of this fire is accidental in nature.

The opinions expressed in this report are based upon this writer's education, training, and work experience. The opinions are also based upon a reasonable degree of scientific certainty and the information available to this writer at the time the report was authored. This writer reserves the right to modify and/or supplement these opinions should new information become available. The investigation, methodology, analysis, findings, conclusions, and opinions detailed in this report are consistent with, and based upon, the recognized and accepted standards and practices of fire and explosion investigation including, but not limited to, applicable sections of the 2021 Edition of NFPA 921, *Guide for Fire and Explosion Investigations*, the 2016 Edition of NWCG PMS-412, *Guide to Wildland Fire Origin and Cause Determination*, and the 2021 Edition of *Wildland Fire Behaviour – Dynamics, Principles and Processes*.